

July 21, 2011

Elisabeth A. Shumaker
Clerk of Court

PUBLISH

UNITED STATES COURT OF APPEALS

TENTH CIRCUIT

SAN JUAN CITIZENS ALLIANCE;
COLORADO ENVIRONMENTAL
COALITION; COLORADO WILD;
OIL AND GAS ACCOUNTABILITY
PROJECT; THE WILDERNESS
SOCIETY,

Plaintiffs - Appellants,

v.

No. 10-1259

MARK STILES, in his official
capacity as San Juan National Forest
Supervisor and BLM Center Manager
of the San Juan Public Lands Center;
RICK CABLES, in his official
capacity as Regional Forester of the
Rocky Mountain Region of the U.S.
Forest Service; UNITED STATES
FOREST SERVICE; THOMAS
VILSACK, in his official capacity as
Secretary of the Department of
Agriculture; UNITED STATES
BUREAU OF LAND
MANAGEMENT; KEN SALAZAR, in
his official capacity as Secretary of the
Department of Interior,

Defendants - Appellees,

and

BP AMERICA PRODUCTION
COMPANY; ELM RIDGE
EXPLORATION COMPANY, LLC;

EXOK, INC.; PETROX RESOURCES,
INC.; XTO ENERGY INC.,

Intervenor-Defendants -
Appellees.

**APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
(D.C. NO. 1:08-CV-00144-RPM)**

Michael S. Freeman (Edward B. Zukoski and Margaret Parish, with him on the briefs), Earthjustice, Denver, Colorado, for Plaintiffs - Appellants.

Thekla Hansen-Young, U.S. Department of Justice, Environment & Natural Resources Division, (Ignacia S. Moreno, Assistant Attorney General; Andrew C. Mergen, Robert Oakley, John S. Most, U.S. Department of Justice, Environment & Natural Resources Division; Kenneth Caps, U.S. Department of Agriculture, Office of General Counsel; and Philip Lowe, U.S. Department of the Interior, Office of Solicitor, with her on the briefs), Washington, D.C., for Defendants - Appellees.

Ezekiel J. Williams, Ducker, Montgomery, Lewis & Bess, P.C., (Steven K. Imig, Ducker, Montgomery, Lewis & Bess, P.C.; Bret A. Sumner, William E. Sparks, Beatty & Wozniak, P.C., with him on the brief, and Charles L. Kaiser, Charles A. Breer, Davis Graham & Stubbs LLP), Denver, Colorado, for Intervenor-Defendants - Appellees.

Before **MURPHY, HARTZ, and O'BRIEN**, Circuit Judges.

HARTZ, Circuit Judge.

This appeal concerns the Northern San Juan Basin Coal Bed Methane project (the Project), which has been approved by the United States Forest

Service (the Forest Service) and the Bureau of Land Management (the BLM). The Project contemplates the construction of numerous gas wells within the San Juan National Forest (the Forest) and on other federal lands. San Juan Citizens Alliance and four other environmental advocacy groups (collectively, SJCA) filed suit in the United States District Court for the District of Colorado against the Forest Service, the BLM, and four government officials (collectively, the Federal Defendants) for alleged violations of the National Forest Management Act (NFMA), 16 U.S.C. §§ 1600–1614, and the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321–4347. The suit contends that the 2007 record of decision (ROD) approving the Project was unlawful. Several companies holding valid leases in the area and interested in drilling for gas (the Lessees) were permitted to intervene as additional defendants. The district court entered judgment in favor of the defendants.

SJCA argues on appeal that the Project violates the NFMA because it is inconsistent with provisions of the San Juan National Forest Plan (the Forest Plan) protecting old-growth ponderosa pine forests, wildlife habitat, and riparian areas, and that the ROD approved individual wells under the Project that violate the Forest Plan's standards and guidelines protecting riparian areas. It further argues that the Federal Defendants violated NEPA in two respects when they prepared an environmental impact statement (EIS) assessing the Project's environmental consequences: (1) the EIS did not adequately analyze the Project's

effects on the Forest's riparian areas, offering only perfunctory references to mitigation measures without evaluating how those measures could correct Forest Plan violations; and (2) the Federal Defendants did not include several nearby national parks and wilderness areas in its cumulative-impact analysis of the Project's effects on air quality and visibility.

We have jurisdiction under 28 U.S.C. § 1291 and affirm in part and remand in part. Ripeness doctrine precludes us from addressing the merits of any of SJCA's challenges to the Project under the NFMA. A claim that the Project is inconsistent with the Forest Plan is not ripe until that inconsistency leads to the improper approval of a specific well (or associated construction). If that causal connection is present, the challenge to the well can encompass a challenge to the defective Project provision under which the well is approved. SJCA's NFMA claims fail for lack of the requisite causal connection. We dispose of them as follows: First, SJCA's claim that the Project is inconsistent with the Forest Plan's old-growth provision is not ripe because SJCA has not challenged the Federal Defendants' approval of any wells that affect the Forest's stands of old-growth ponderosa pine. Second, SJCA's contention that the Project violates certain wildlife-habitat provisions in the Forest Plan is not ripe because SJCA's appellate briefs have not argued, much less shown, any causal connection between the alleged violations and specifically challenged well approvals. Third, SJCA's opening brief on appeal appears to raise a ripe challenge to the consistency of the

Project with the Forest Plan provisions protecting riparian areas when it complains of riparian damage caused by approval of specific wells and associated construction of a road. It turns out, however, that the wells and road are not within the Forest Plan's management area for riparian land, so the challenge to approval of the Project based on inconsistencies with the Forest Plan's mandates for riparian areas is likewise unripe. (The challenges to the specific well approvals *are* ripe, but fail on the merits.) Because SJCA's NFMA claims that the Project is inconsistent with the Forest Plan are not ripe, we remand to the district court to vacate its judgment on those claims and to dismiss them without prejudice.

As for SJCA's NEPA claims, we reject them on the merits. First, the EIS's discussion of riparian-area mitigation measures is more than adequate to satisfy NEPA. An EIS assessing environmental consequences at the programmatic stage of a multi-step development project can properly discuss mitigation measures in general terms when the specifics of possible well locations are still uncertain, leaving for later a more complete analysis of environmental consequences associated with permitting a particular well site. Second, the Federal Defendants' decision on which public lands to include in the cumulative-impact analysis of air quality was a reasonable choice involving technical and scientific matters within their areas of expertise.

I. BACKGROUND

A. Overview Of The Federal Regulatory Structure

The Forest Service, an agency within the United States Department of Agriculture, manages the National Forest System. *See Utah Env'tl. Congress v. Richmond*, 483 F.3d 1127, 1131 (10th Cir. 2007). Among the laws governing that management is the NFMA, which requires the Forest Service to “develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System.” 16 U.S.C. § 1604(a). Those plans, commonly known as forest plans, guide all natural resource management activities. *See* 36 C.F.R. § 219.1(a). They must provide for multiple uses of the forests, and include “coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness.” 16 U.S.C. § 1604(e)(1). All resource plans and permits, contracts, and other instruments for use and occupancy of the National Forest lands must be consistent with the governing forest plan. *See id.* § 1604(i).

The BLM, which is in the Department of the Interior, administers oil and gas leases on federal land. *See* 30 U.S.C. § 226; *Wyoming Outdoor Council v. Bosworth*, 284 F. Supp. 2d 81, 81–83 (D.D.C. 2003). For land within the National Forest System, however, a lease may not be issued over the objection of the Forest Service, *see* 30 U.S.C. § 226(h), and the Forest Service regulates surface-disturbing activity on the leasehold, *see id.* § 226(g); *Bosworth*, 284 F. Supp. 2d at 82–83.

The Forest Service and BLM are subject to NEPA, which “requires federal agencies to examine and disclose the environmental impacts of their proposed actions,” *Richmond*, 483 F.3d at 1133. It has twin aims:

First, it places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action. Second, it ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process.

Under NEPA, before an agency may take major Federal actions significantly affecting the quality of the human environment, [it] must prepare an environmental impact statement . . . in which [it] considers the environmental impacts of the proposed action and evaluates alternatives to the proposed action, including the option of taking no action. In doing so, the agency must take a “hard look” at information relevant to its decision.

Forest Guardians v. U.S. Fish & Wildlife Serv., 611 F.3d 692, 711 (10th Cir. 2010) (citations, brackets and internal quotation marks omitted). “NEPA imposes only procedural requirements” *Richmond*, 483 F.3d at 1133. It does not “mandat[e] that agencies achieve particular substantive environmental results.” *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989). Nor does it require the court “to fly speck the [EIS], but rather, to make a pragmatic judgment whether the [EIS]’s form, content and preparation foster both informed decision-making and informed public participation.” *Custer Cnty. Action Ass’n v. Garvey*, 256 F.3d 1024, 1035 (10th Cir. 2001) (internal quotation marks omitted).

B. The San Juan Basin and the Forest Plan

Words cannot adequately convey what makes the San Juan Basin so special. We will not even attempt an approximation. The Basin occupies about 26,000 square miles in northwestern New Mexico and southwestern Colorado. Its topography includes plateaus, mesas, mountains, rolling uplands, canyons, and valleys. It is interspersed with transient and permanent streams, and four rivers. Humans have made their homes in the Basin for millenia. The Basin also provides valuable habitat and migration routes for many species of wildlife, including big game and a number of bird species. The Basin offers extensive recreational and cultural resources.

Of particular relevance to this appeal, the Basin has the second-largest natural-gas field in the United States. That natural gas includes coal-bed methane (CBM), a byproduct of the evolution of organic matter into coal. It forms from organic debris buried beneath thousands of feet of sediment. The gas remains contained in and adsorbed to the coal until it is liberated by removing the surrounding groundwater, a process that reduces the pressure within the coal bed. The first CBM wells were drilled in the San Juan Basin in 1948, and widespread CBM development in the area began in the mid-1980s. By 1999 there were some 1,000 CBM wells in the Colorado portion of the Basin.

The San Juan Forest occupies more than one million acres within the San Juan Basin. It is governed by the Forest Plan, which was adopted in 1983 and

amended in 1992. The Plan “establishes management standards and guidelines for” the Forest. Lessees’ Supp. App., Vol.1 at 3. It identifies several management areas consisting of different types of terrain and resources. For each area the Plan sets forth specific management requirements, which “set the baseline conditions that must be maintained . . . in carrying out th[e] Forest Plan. They establish the environmental quality requirements, natural and depletable resource requirements, and mitigating measures that apply to all areas of the Forest.” Aplt. App., Vol. I at 232. Any occupancy or use of lands in the Forest, including the development of gas resources, must be consistent with these requirements.

C. The Project

In 2000, six companies, including the Lessees, submitted a proposal to drill for CBM in a portion of the San Juan Basin within Colorado’s La Plata and Archuleta Counties. The 125,000-acre area (the Project Area) is comprised of 49,000 acres within the San Juan Forest, 7,000 acres of BLM administered land, 9,000 acres of private lands overlying federal minerals, and 60,000 acres of state and privately held lands overlying nonfederal minerals. The Lessees’ gas-field development plan proposed drilling 284 wells, 185 of which would be on federal mineral estate. The plan also called for associated construction, such as access roads, pipelines, and facilities for measuring and compressing gas. The life of the proposed project, from initial construction through production and until the

initiation of reclamation, would be about 40 years. The federal government does not have authority over private mineral development; but such development was considered in the EIS analysis of cumulative environmental impacts.

On April 4, 2000, the Federal Defendants published notice in the Federal Register of their intent to prepare an EIS on proposed CBM development in the Project Area. *See* 65 Fed. Reg. 17672 (Apr. 4, 2000). In compliance with the scoping regulation of the Council on Environmental Quality, they held meetings and invited written comments to assist them in “determining the scope of issues to be addressed [in the EIS] and . . . identifying the significant issues related to [the proposed Project].” 40 C.F.R. § 1501.7. On June 10, 2004, the Federal Defendants released a draft EIS that considered five alternatives, including a no-action alternative. They took public comments until November 30, 2004, receiving about 68,000 responses. The final EIS, published in July 2006, did not carry forward two of the earlier proposed alternatives (Alternatives 3 and 4) but analyzed in detail the other three of those alternatives and two new alternatives (Alternatives 6 and 7) that arose out of comments from the public.

In April 2007, after receiving and responding to additional public comments, the Federal Defendants issued the ROD. It approved a gas-field development plan allowing somewhat less CBM development than under Alternative 7, the preferred alternative in the EIS, and significantly less than under Alternative 1, the Lessees’ proposal. The approved plan contemplates the

potential construction of no more than 138 wells and 127 well pads on federal lands, which would result in the short-term disturbance of 650 acres and long-term disturbance of 381 acres in the 125,000-acre Project Area.

The ROD did not, however, permit commencement of all the proposed construction; it specifically authorized only five wells. Development of the rest of the Project requires additional agency action. Even after approval of the Project, a Lessee must file for each well site an application for permit to drill (APD), which contains a surface-use plan of operations (SUPO). *See* 30 U.S.C. § 226(g); 43 C.F.R. § 3162.3-1(d)(2). The SUPO, which may be submitted for several wells, must provide the location of the drillpad and road, details of pad construction and methods of containing and disposing of waste, and a surface reclamation plan for when the well is put out of service. *See* 43 C.F.R. § 3162.3-1(f). Before approving the SUPO, the Federal Defendants must ensure that the SUPO is consistent with federal law, *see* 36 C.F.R. § 228.107(a)(1), and, for wells in the San Juan Forest, the Forest Plan, *see id.* § 228.107(a)(2), and must “prepare an environmental record of review or an environmental assessment, as appropriate[,] . . . [to] be used in determining whether or not an environmental impact statement is required and in determining any appropriate terms and conditions of approval of the submitted plan,” *id.* § 3162.5-1(a). Wells in the national forest require Forest Service approval of the SUPO before the BLM can approve an APD. *See* 30 U.S.C. § 226(g); 43 C.F.R. § 3162.3-1(h).

The ROD approved five SUPOs for individual wells and denied two others. Since the ROD's issuance, the Federal Defendants have approved at least 16 additional SUPOs, as well as special use permits for state monitoring wells, construction of pipelines, and road reconstruction, use, and maintenance. The Federal Defendants estimate that the Lessees will submit between 20 to 30 new APDs per year, each of which, as noted above, will undergo an environmental review when submitted.

D. SJCA's Challenges to the Project

SJCA appealed the approval of the Project to the Regional Forester, seeking the ROD's withdrawal. It challenged the Federal Defendants' "[a]pproval of surface use associated with gas field development plans and environmental protection measures for [Forest Service] lands," Aplt. Supp. Post-Argument App., Vol. VII at 2023, and their approval of the five SUPOs. The Forest Service denied SJCA's appeal and affirmed the ROD, although it mandated some additional mitigation measures.

SJCA then filed suit in federal court challenging the validity of the ROD and the EIS on which it is based. In addition to contending that the Federal Defendants' analysis of the Project failed to meet the procedural requirements of NEPA, it asserted that the Project violates the NFMA because it fails to meet the Forest Plan's requirements for the protection of old-growth ponderosa pine, wildlife habitat in certain management areas, and streams and riparian areas. The

district court disagreed and affirmed the approval of the Project. Although it acknowledged “flaws in the analysis done in the preparation and writing of the [EIS] and in the matching up of the [P]roject with the requirements of the Forest Plan,” it found them to be “minor in proportion to the full context of the agency action under review.” Aplt. App., Vol. I at 159. SJCA timely appealed.

II. DISCUSSION

A. Standard of Review

We review de novo the district court’s decision affirming the Federal Defendant’s issuance of the ROD. *See Olenhouse v. Commodity Credit Corp.*, 42 F.3d 1560, 1564 (10th Cir. 1994). SJCA’s claims in district court were challenges to final agency action under the Administrative Procedures Act. *See Utah Env’tl. Congress v. Russell*, 518 F.3d 817, 823 (10th Cir. 2008) (noting that “neither the NFMA nor NEPA provide a private right of action”). When courts consider such challenges, an agency’s decision is entitled to a presumption of regularity, *see Rapp v. U.S. Dep’t of Treasury*, 52 F.3d 1510, 1515 (10th Cir. 1995), and the challenger bears the burden of persuasion. *See Citizens’ Comm. to Save Our Canyons v. Krueger*, 513 F.3d 1169, 1176 (10th Cir. 2008). But we can set aside an agency decision if it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A); *see Morris v. U.S. Nuclear Regulatory Comm’n*, 598 F.3d 677, 690 (10th Cir. 2010).

An agency's decision is arbitrary and capricious if the agency (1) entirely failed to consider an important aspect of the problem, (2) offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise, (3) failed to base its decision on consideration of the relevant factors, or (4) made a clear error of judgment.

New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 704 (10th Cir. 2009) (citations and internal quotation marks omitted). The deference we give agency action “is especially strong where the challenged decisions involve technical or scientific matters within the agency’s area of expertise.” *Russell*, 518 F.3d at 824.

B. The NFMA Claims

SJCA argues that the Federal Defendants’ approval of the ROD violated the NFMA because the Project is inconsistent with a number of the Forest Plan’s standards and guidelines that protect and conserve the Forest’s old-growth ponderosa pines, wildlife habitat, and riparian areas. We address these contentions in turn.

1. The Old-Growth Standard

SJCA contends that the Project is inconsistent with a Forest Plan requirement that “[i]n forested areas of a unit,” Aplt. App., Vol. I at 233—in this case all national forest lands within the Project area,—“5 percent or more should be in old-growth.” *Id.* SJCA notes that “[t]he EIS estimated that old growth currently represents only 3.8 percent of the ponderosa pines on national forest

lands in the Project area,” Aplt. Br. at 17, and contends that “[t]he Project exacerbates this violation by allowing destruction of still more old growth for well pads and roads,” *id.* It finds support for its claim in the EIS’s allegedly dispositive admission that the fully developed Project would impact old-growth ponderosa pine in the Project Area and that “[t]hese reductions in the old growth stage would move the Project Area further away from the’ five percent standard.” *Id.* (quoting Aplt. App., Vol. I at 280). SJCA asserts that approval of the Project was therefore unlawful, and that the Federal Defendants should have amended the Forest Plan or modified the Project to avoid violating it.

The Federal Defendants disagree with SJCA’s characterization of the Forest Plan’s old-growth standard as mandatory. They assert that the 5% standard is merely aspirational, “not a binding requirement, and thus the Project may proceed even though there is less than five percent old growth timber in the Project Area.” Fed. Defs. Br. at 19.

And in any event, they and the Lessees argue, we need not reach the merits of that dispute because SJCA’s old-growth claim is premature. They contend that until the Federal Defendants grant site-specific authorization for a well pad whose construction would affect areas of old growth, SJCA’s old-growth challenge is not ripe for adjudication. We agree.

The “ripeness doctrine is drawn both from Article III limitations on judicial power and from prudential reasons for refusing to exercise jurisdiction.” *Reno v.*

Catholic Soc. Servs., Inc., 509 U.S. 43, 57 n.18 (1993). It serves “to prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies, and . . . to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties.” *Abbott Labs. v. Gardner*, 387 U.S. 136, 148–49 (1967). To determine whether an issue is ripe for judicial review, we must examine “both the fitness of the issues for judicial decision and the hardship to the parties of withholding court consideration.” *Ohio Forestry Ass’n v. Sierra Club*, 523 U.S. 726, 733 (1998) (internal quotation marks omitted). “[T]he burden is on the [party challenging an agency action] to provide evidence establishing that the issue[] [is] ripe for review.” *Park Lake Res. LLC v. U.S. Dep’t of Agric.*, 197 F.3d 448, 450 (10th Cir. 1999).

The Supreme Court’s opinion in *Ohio Forestry* helps demonstrate why SJCA must wait to challenge the Project’s consistency with the Forest Plan’s old-growth standard. In that case the Forest Service had adopted a forest plan which specified those parts of the Wayne National Forest suitable for logging, set logging goals and limits, and determined which methods of harvesting timber would be appropriate. *See Ohio Forestry*, 523 U.S. at 729. The Sierra Club challenged the plan on the grounds that it permitted excessive logging and clearcutting, *see id.* at 728, but Ohio Forestry argued that the case was

nonjusticiable because the controversy was not ripe. *See id.* at 732. To determine ripeness the Court considered: “(1) whether delayed review would cause hardship to the plaintiffs; (2) whether judicial intervention would inappropriately interfere with further administrative action; and (3) whether the courts would benefit from further factual development of the issues presented.” *Id.* at 733. A unanimous Court ruled that all three factors argued against ripeness. *See id.*

To begin with, although the plan’s “promulgation . . . ma[de] logging more likely in that it is a logging precondition [and] in its absence logging could not take place,” *id.* at 730, no cognizable harm flowed immediately from adoption of the plan. The plan did not “command anyone to do anything or to refrain from doing anything; [it did] not grant, withhold, or modify any formal legal license, power, or authority; [it did] not subject anyone to any civil or criminal liability; [and it] create[d] no legal rights or obligations,” such as “giv[ing] anyone a legal right to cut trees.” *Id.* at 733. Before tree harvesting could commence, the Forest Service had to take additional site-specific actions: proposing a specific area for logging and a specific harvesting technique, providing notice and an opportunity for comments, conducting an environmental analysis under NEPA, and making a final decision that could be challenged through administrative appeals and the courts. *See id.* at 729–30. Thus, the Sierra Club would have “ample opportunity . . . to bring its legal challenge at a time when harm is more imminent and more certain.” *Id.* at 734. And such a challenge could include a “challenge

to the lawfulness of the [forest plan] *if (but only if) the [plan] then matter[ed], i.e., if [it] play[ed] a causal role with respect to the future, then-imminent harm from logging.*” *Id.* (emphasis added). Although the Sierra Club said that it would “be easier, and certainly cheaper, to mount one legal challenge against the Plan now, than to pursue many challenges to each site-specific logging decision to which the Plan might eventually lead,” the Court responded that it would expect preclusion principles to enable the Sierra Club effectively to carry the day based on “one initial site-specific victory (if based on the Plan’s unlawfulness),” and “in any event, the Court has not considered this kind of litigation cost saving sufficient by itself to justify review in a case that would otherwise be unripe.” *Id.* at 734–35.

Regarding the second factor, the Court said that “immediate judicial review directed at the lawfulness of logging and clearcutting could hinder [the Forest Service’s] efforts to refine its policies.” *Id.* at 735. For example, it could revise the plan before implementation “in response to an appropriate proposed site-specific action that [would otherwise be] inconsistent with the Plan.” *Id.* Or it could adjust site-specific application of the plan to avoid potential inconsistencies. *See id.*

And finally, the Court reasoned that further factual development of the Sierra Club’s claim would be beneficial to the courts. To resolve the challenge on the present record, the Court would have to engage in “time-consuming . . .

consideration of the details of an elaborate, technically based plan . . . without benefit of the focus that a particular logging proposal could provide.” *Id.* at 736. Also, review could ultimately prove unnecessary if, as the Court had previously noted, the Forest Service chose to “revise the Plan or modify the expected methods of implementation.” *Id.*

A Ninth Circuit opinion nicely illustrates when a challenge to a forest plan is ripe for review. In *Wilderness Society v. Thomas*, 188 F.3d 1130 (9th Cir. 1999), the Wilderness Society contended that the Forest Service had violated the NFMA by approving a forest plan for the Prescott National Forest that identified acreage *capable* of being used for commercial livestock grazing without conducting a proper analysis of whether the lands were *suitable* for that purpose. *See id.* at 1132–35. In addition, the Wilderness Society alleged that the Forest Service had unlawfully issued grazing permits for two allotments without conducting an analysis of grazing suitability. *See id.* at 1133. Following *Ohio Forestry*, the court ruled that the general challenge to the sufficiency of the forest plan was not ripe. *See id.* at 1134. The site-specific claims, however, were justiciable. And because the Wilderness Society alleged that “the site-specific injury to the two allotments [was] caused by a defect in the Forest Plan,” the court could “consider whether the Forest Service complied with the [NFMA] in making its general grazing suitability determinations in the Forest Plan.” *Id.*; *see Wilderness Soc’y v. Alcock*, 83 F.3d 386, 390–91 (11th Cir. 1996) (claim that

forest plan violated the NFMA was not ripe until Forest Service issued a site-specific decision that was made possible by the alleged defect in forest plan); *cf. Sierra Club v. Robertson*, 28 F.3d 753, 758–59 (8th Cir. 1994) (Sierra Club did not have standing to challenge Ouachita National Forest Plan because it had not suffered the necessary injury-in-fact; adoption of the plan, a “general planning tool” that did “not effectuate any on-the-ground environmental changes,” did not produce an imminent injury; it could, however, challenge a site-specific action and “assert that the proposed site-specific action is not consistent with the Plan, or that the Plan as it relates to the proposed site-specific action is inconsistent with the governing statutes, or both.”); *San Juan Citizens Alliance v. Norton*, 586 F. Supp. 2d 1270, 1295 (D.N.M. 2008) (plaintiff’s “programmatic challenge” was not ripe for review because the resource management plan did not “authorize any specific ground-level disturbances” and “all decisions concerning future, site-specific actions such as approval of an application for a permit to drill [would be] subject to administrative approval, and [would] include a detailed NEPA analysis of the likely environmental impacts of the proposed action”); *Bosworth*, 284 F. Supp. 2d at 90–93 (plaintiff’s challenge to issuance of an oil-and-gas lease was not ripe for review because actual development rested upon uncertain future events, including the lessees’ submission of APDs and agency approval of SUPOs).

Applying this law to SJCA’s claim that approval of the Project violated the Forest Plan’s 5% old-growth standard, it is clear that the claim is not ripe. The Project approval does not cause the loss of a single old-growth ponderosa pine. To borrow the Supreme Court’s parlance, it does not “command anyone to do anything or to refrain from doing anything; [it] do[es] not grant, withhold or modify any formal legal license, power, or authority; . . . [it] create[s] no legal rights or obligations.” *Ohio Forestry*, 523 U.S. at 733. No construction or drilling will take place, and no potential injury can occur, until the Forest Service approves site-specific SUPOs.

True, SJCA has challenged several site-specific approvals of SUPOs. But it does not dispute that none of these sites contains old-growth ponderosa pines. Thus, even if, as SJCA suggests, the Project should not have been approved without changes to its treatment of old growth, that error has not “play[ed] a causal role,” *id.* at 734, in any harm to old-growth trees. Accordingly, delaying review of the old-growth claim does not cause hardship to the interests asserted by SJCA. It can wait to bring a challenge when a site-specific SUPO threatens old growth—“a time when harm is more imminent and more certain.” *Id.*

The other two ripeness factors articulated in *Ohio Forestry* likewise favor delay in adjudication. Judicial review of SJCA’s claim at this time could hinder the Forest Service’s efforts to refine its policies. When faced with a request to approve a specific well, it may wish to revise the Forest Plan; and further study

may alter the factual assumptions underlying the Project, resulting in modification to site-specific drilling proposals, site-approval practices, or even the old-growth standard itself. For example, we note that the Forest Service represents that it now believes that the Project contains more than 5% old growth. We need not accept that representation as true to recognize that if such a finding were adopted before approval of a SUPO that called for cutting some old growth, the Forest Service might well adjust its analysis of the Project.

As for the third factor—benefit to the judiciary—delaying review of SJCA’s claim prevents time-consuming judicial consideration of an alleged injury that may never come to pass. By the time the Federal Defendants approve a well affecting the Forest’s old growth, new information may demonstrate the Project’s consistency with the Forest Plan or the Forest Service may have amended the Forest Plan’s old-growth standard. Or, of course, a well impacting the Forest’s old growth may never be approved.

Accordingly, we remand SJCA’s old-growth claim to the district court with instructions to vacate the portion of its judgment resolving that claim and to dismiss the claim without prejudice. *See Friends of Marolt Park v. U.S. Dep’t of Transp.*, 382 F.3d 1088, 1097 (10th Cir. 2004) (instructing district court to vacate the portion of its judgment pertaining to an unripe claim); *Coal. for Sustainable Res., Inc. v. U.S. Forest Service*, 259 F.3d 1244, 1253 (10th Cir. 2001) (same).

2. The Wildlife Standards

SJCA argues that the Federal Defendants violated the NFMA when they approved the Project because they essentially disregarded four Forest Plan standards designed to protect species' habitat in two of the Forest's Management Areas, 4B and 5B. Area 4B is a 95,070-acre portion of the Forest that is managed primarily to maintain habitat for a variety of species. SJCA challenges the Project's compliance with two guidelines for Area 4B:

- (1) "Maintain at least 90 percent of the habitat needed to support the State population goals" for "commonly hunted, fished, or trapped" species (the 4B 90% Guideline). Aplt. App., Vol. I at 236.
- (2) "Maintain habitat capability at a level of at least 80 percent of potential capability" for certain wildlife species (the 4B 80% Guideline). *Id.*

Area 5B consists of 150,110 acres of Forest land that is managed as winter range for big game species—deer, elk, bighorn sheep, and mountain goats. The Project's compliance with two guidelines for Area 5B is challenged by SJCA:

- (1) "Maintain habitat effectiveness during winter of at least 90 percent" for big game (the 5B 90% Guideline). *Id.* at 241.
- (2) "Maintain habitat capability at a level at least 80 percent of potential capability" for big game (the 5B 80% Guideline). *Id.*

SJCA contends that the Federal Defendants failed to analyze the 4B and 5B 90% Guidelines "anywhere in the EIS and [ROD] approving the Project," Aplt. Reply Br. at 6, and that the 4B and 5B 80% Guidelines "receive[d] only a conclusory

reference in the EIS that lack[ed] any administrative record support,” *id.* at 7. By this failure, SJCA claims, the Federal Defendants violated the NFMA.

As with SJCA’s old-growth claim, however, a stand-alone challenge to Project approval based on inconsistency with the Forest Plan is not ripe for review. A challenge can be raised only if Project approval “play[ed] a causal role” with respect to an imminent harm, such as approval of a SUPO. *Ohio Forestry*, 523 U.S. at 734. Perhaps such a challenge could be ripe because the Federal Defendants have approved site-specific projects within Management Areas 4B and 5B. But SJCA’s briefs on appeal fail to argue, much less cite factual support for, a causal connection between the site-specific approvals and the Project’s alleged inconsistencies with the Forest Plan. It did not allege any particulars regarding how the specific approvals could contribute to violation of the standards for Areas 4B or 5B. Any ripe claim is therefore waived. *See Anderson v. U.S. Dep’t of Labor*, 422 F.3d 1155, 1174 (10th Cir. 2005) (“The failure to raise an issue in an opening brief waives that issue.”).

3. The Riparian Standards

SJCA contends that the Project is inconsistent with Forest Plan standards that apply to Forest Management Area 9A. The Forest Plan defines Area 9A to include “the aquatic ecosystem, the riparian ecosystem . . . , and adjacent ecosystems that remain within approximately 100 feet measured horizontally from both edges of all *perennial* streams and from the shores of lakes and other still

water bodies.” Aplees.-Fed. Defs. Supp. App., Vol. I at 53 (emphasis added).

The Forest Service manages these ecosystems together “as a land unit comprising an integrated riparian area, and not as separate components.” *Id.*

The Forest Plan limits development within Area 9A through standards and guidelines. SJCA’s briefs focus on four limitations (the Area 9A standards):

- “Proposed new land-use facilities (roads, campgrounds, buildings) will not normally be located within flood-plain boundaries for the 100-year flood.” The Forest Service must “[p]rotect present and all necessary future facilities that cannot be located out of the 100-year floodplain by structural mitigation (deflection structures, riprap, etc.)” Aplt. Appx., Vol. I at 246.
- The Forest Service must “[p]revent stream channel instability, loss of channel cross-sectional areas, and loss of water quality resulting from activities that alter vegetative cover.” *Id.*
- The Forest Service must “[l]ocate mineral removal activities away from the water’s edge or outside the riparian area.” *Id.* at 249.
- The Forest Service must “[l]ocate roads and trails outside riparian areas unless alternative routes have been reviewed and rejected as being more environmentally damaging.” *Id.* at 250.

SJCA contends that approval of the ROD violates the NFMA because some of the

Project’s proposed development is located in riparian areas and the EIS

acknowledged that the Project may not comply with the Area 9A standards.

According to SJCA, the Federal Defendants should therefore have modified the

proposal, rejected the proposal, or amended the Forest Plan, but, instead, they

“shirked [their] duty under NFMA” by “deferr[ing] the anticipated ‘compliance

issues’ until the time individual wells were approved during implementation of

the Project.” Aplt. Br. at 42. SJCA also claims that the Federal Defendants’ site-specific approval of two wells and the associated construction of an access road and pipeline violates the Area 9A standards.

We need not repeat our reasoning with respect to SJCA’s other NFMA issues to state that its challenge to the Project based on violation of the Area 9A standards can be ripe only if it challenges site-specific approvals whose contribution to violation of these standards is causally related to the Project approval. On this claim, in contrast to the other NFMA claims, SJCA’s appellate briefs argue this causal connection, contending that approval of two Bull Canyon wells and the associated road construction violates the Forest Plan.¹ In August 2008 the Forest Service approved the construction of the two wells and the

¹In a post-oral-argument letter submitted under Fed. R. App. Proc. 28(j), SJCA appears to claim that it has also challenged the Federal Defendants’ site-specific approval of road construction within Area 9A along Fosset Gulch. But SJCA’s opening brief is silent on the approval of that construction. It was not until its reply brief that SJCA first mentioned the approval, stating: “Like Bull Canyon, the Fosset Gulch approval ignores the 9A violations identified by the EIS. It asserts (incorrectly) that ‘no disturbance would occur within any water influence zones.’” Aplt. Reply Br. at 20 n.10. SJCA’s belated mention of the approval of the Fosset Gulch construction was not sufficient to preserve its challenge for appeal. *See Anderson v. U.S. Dep’t of Labor*, 422 F.3d 1155, 1174 (10th Cir. 2005) (“The failure to raise an issue in an opening brief waives that issue.”).

The 28(j) letter also claimed that SJCA had challenged the approval of well 9U#2 (not a Bull Canyon well) as violative of the Area 9A standards. But, again, SJCA’s opening brief is silent on approval of this well. On the contrary, the brief states that the two “Bull Canyon wells are the only individual approvals issued to date where the EIS had anticipated a riparian buffer zone violation.” Aplt. Br. at 43 n.12. This challenge is likewise waived.

associated reconstruction of approximately 5000 feet of the existing Bull Canyon Road, NFSR 841, which provides access to the well sites. The parties appear to agree that the two well sites themselves are not located in Area 9A. They also agree that a portion of reconstructed Bull Canyon road runs along and crosses the upper reaches of Little Bull Creek, an “[i]ntermittent and [e]phemeral” tributary of the Lower Piedra River. Aplt. Supp. Post-Argument App., Vol. I at 262. What the parties disagree about, however, is whether the portion of Little Bull Creek along which Bull Canyon Road runs is part of Area 9A and therefore subject to the Area 9A standards.

The Federal Defendants’ position is straightforward. They rely (1) on the fact (unchallenged by SJCA) that Little Bull Creek is an “[i]ntermittent and [e]phemeral” stream, *id.*, and (2) the definition of Area 9A as including only areas within 100 feet of *perennial* streams, *see* Aplees.-Fed. Defs. Supp. App., Vol. I at 53. Because the portion of Bull Canyon Road addressed in the approval of the Bull Canyon wells is therefore not in Area 9A, the approval could not violate the Area 9A standards.

SJCA responds that the Federal Defendants’ “suggest[ion] that 9A standards may not apply to non-perennial streams” is a “post-hoc rationalization,” and asserts that they have “always recognized the standards’ applicability to [non-perennial] streams.” Aplt. Reply Br. at 20 n.9. SJCA appears to be invoking (without citation to any court opinions or other authority) the doctrine of *SEC v.*

Chenery Corp., 318 U.S. 80 (1943), which does not permit an administrative agency to defend against a court challenge to an agency decision by invoking a rationale for its decision that had not been expressed in the agency's administrative proceedings.

To support its assertion that the Federal Defendants had previously considered intermittent streams to be within Area 9A, SJCA primarily relies on the EIS. The EIS examined water influence zones (WIZs) to "evaluate the proximity of CBM surface disturbances to surface drainages and water bodies," Aplees.-Fed. Defs. Supp. App., Vol. I at 108. For intermittent and ephemeral streams, such as Little Bull Creek, the WIZ extended 100 feet on each side of the stream. (For perennial streams it extended 300 feet on each side.) After noting the proposed "new road construction adjacent to" Little Bull Creek and elsewhere, the EIS stated that "[r]oad construction as proposed in the WIZ would modify floodplains, increase sediment delivery, and impact water quality to a high degree in" the Bull Creek watershed,² Aplt. App., Vol. I at 270, and that the proposed

² The complete passage reads:

Alternatives 1, 2, 5, 6, and 7 would have the same impacts within the Bull Creek watershed. Large watershed impacts from high road densities would occur with all alternatives, especially when compared to the current undeveloped state of the mid and upper watershed. *Bull Creek and the majority of Little Bull Creek would have new road construction adjacent to the entire length of these streams.* Field examination verifies that many new road stream crossings, road crossings of side tributaries (approximately 26 road crossings in 2 miles), and substantive construction
(continued...)

construction in the Bull Creek watershed “may not comply” with some of the Area 9A standards,³ *id.* at 274. SJCA also claims support for its position in (1) a memo written by a forest hydrologist, which states that in the Bull Creek

²(...continued)

within the WIZ would be necessary if the road were built as proposed. In many sections of the canyon, the valley bottom is so narrow that the road would likely encroach in the stream floodplain and channel. *Road construction as proposed in the WIZ would modify floodplains, increase sediment delivery, and impact water quality to a high degree in a watershed that is largely undeveloped.* Bull Creek is an alternately perennial and intermittent stream that flows directly into the Piedra River. Construction-derived sediment delivered to Bull Creek would likely also route into the Piedra River, a perennial fish-bearing river.

Aplts. App., Vol. I at 270 (emphasis added).

³ The part of the paragraph referring to Bull Creek states:

Within the largely undeveloped Bull Creek watershed, Alternatives 1, 2, 5, 6, and 7 propose extensive new road, well, and pipeline construction parallel to the stream and in the WIZ and through narrow, confined canyon bottoms. *Those activities may not comply with the following management standards:* “Locate mineral removal activities away from the water edge or outside of the riparian area (Forest Plan – MA 9A Mining Law Compliance and Administration – GD, 02)” . . . and: “Prevent stream channel instability, loss of channel cross-sectional areas, and loss of water quality resulting from activities that alter vegetative cover (Forest Plan – MA 9A Water Resource Improvement and Maintenance – GD, 03,” and: “Locate roads and trails outside riparian areas unless alternative routes have been reviewed and rejected as being more environmentally damaging (Forest Plan – MA 9A Transportation System Management – L01, L02, 01).

Id. at 274–75 (emphasis added).

watershed the WIZ “include[s] . . . an area 100 feet from the exterior edge of any stream,” *id.*, Vol. II at 444, and (2) a hard-to-read map which may show Bull Canyon Road crossing a WIZ.

But the EIS and other statements relied on by SJCA do not purport to redefine the boundaries of Area 9A, nor do they unequivocally state that the Bull Canyon Road, or the portion pertinent to our inquiry, is in Area 9A. That the EIS analyzed effects on water quality throughout a WIZ that included significantly more than Area 9A reflects the exhaustive breadth of the EIS, not its interpretation of the Forest Plan.

In our view, the Federal Defendants’ argument is not barred by *Chenery*. The record contains the Forest Plan’s definition of Area 9A and the Federal Defendants’ description of Little Bull Creek as an ephemeral or intermittent stream. No further analysis is necessary to determine that Little Bull Creek is not in Area 9A. Perhaps there is an ambiguity in the Federal Defendants’ Supplemental Information Report that supported approval of the Bull Canyon wells and associated road construction. It said simply that “no riparian zones would be affected” by the proposed construction. *Id.* at 576. One might interpret the statement as saying that even though there is proposed construction in riparian zones, they will not be affected. But the more natural reading is that the construction would not be in riparian zones. And if SJCA had been uncertain about the matter, it could have objected to the well approval in administrative

proceedings on the ground that Area 9A standards would be violated. Indeed, its failure to raise that objection in the administrative proceedings would have foreclosed our consideration of the issue if any defendant had raised an exhaustion defense. *See Forest Guardians v. U.S. Forest Service*, 641 F.3d 423, 430 (10th Cir. 2011) (“Plaintiffs must exhaust available administrative remedies before the [Forest Service] prior to bringing their grievances to federal court.”)

Accordingly, we hold that the approval of the Bull Canyon wells could not have violated the Area 9A standards because the well pads and their associated construction are not within Area 9A. And absent a challenge to site-specific approvals within Area 9A, SJCA has no ripe challenge to Project approval based on alleged violations of Forest Plan requirements for that area. We therefore remand to the district court to vacate its judgment on SJCA’s Area 9A claims and to dismiss them without prejudice. As for SJCA’s Area 9A challenge to the approval of the Bull Canyon wells and associated road construction, we reject the challenge on the merits.

D. SJCA’s NEPA Claims

SJCA contends that the Federal Defendants’ analysis of the Project led to multiple NEPA violations. We hold that SJCA has not established any ground for reversal under NEPA of the district court’s decision.

1. The Riparian Areas

As we understand SJCA’s riparian-area NEPA claim, it is arguing that the EIS did not satisfy the requirements of NEPA because it acknowledged that some of the Project’s proposed development “may not comply” or “may conflict” with various Area 9A standards, *id.*, Vol. I at 273–275, yet it offered only perfunctory references to mitigation measures without analyzing how those measures could correct the anticipated violations of the Forest Plan. According to SJCA, the EIS’s discussion of mitigation measures fell short of NEPA’s mandated “hard look,” and left the public unable to assess the Project’s conformity with Forest Plan mandates. We disagree.

To be sure, an EIS must assess whether there are “[p]ossible conflicts between the proposed action and the objectives of Federal . . . use plans,” 40 C.F.R. § 1502.16(c), and then discuss “steps that can be taken to mitigate [a project’s] adverse environmental consequences.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351 (1989). This requirement is “[i]mplicit in NEPA’s demand that an agency prepare a detailed statement on ‘any adverse environmental effects which cannot be avoided should the proposal be implemented.’” *Id.* at 351–52 (quoting 42 U.S.C. § 4332(C)(ii)). Accordingly, the EIS must discuss “mitigation . . . in sufficient detail to ensure that environmental consequences have been fairly evaluated.” *Id.* at 352. An agency is required to “discuss possible mitigation measures in defining the scope of the EIS, 40 CFR § 1508.25(b) (1987), in discussing alternatives to the proposed

action, § 1502.14(f), and consequences of that action, § 1502.16(h), and in explaining its ultimate decision, § 1505.2(c).” *Id.* “It is not enough to merely list possible mitigation measures.” *Colorado Env’tl. Coal. v. Dombeck*, 185 F.3d 1162, 1173 (10th Cir. 1999).

But NEPA does not contain “a substantive requirement that a complete mitigation plan be actually formulated and adopted.” *Robertson*, 490 U.S. at 352. An EIS’s discussion of mitigation measures need be only “reasonably complete.” *Id.* It need not present a mitigation plan that is “legally enforceable, funded or even in final form to comply with NEPA’s procedural requirements.” *Nat’l Parks & Conservation Ass’n v. U.S. Dep’t of Transp.*, 222 F.3d 677, 681 n.4 (9th Cir. 2000).

“[T]he line between an EIS that contains an adequate discussion of mitigation measures and one that contains a ‘mere listing’ is not well defined.” *Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 476 (9th Cir. 2000). The essential test is reasonableness. *See Robertson*, 490 U.S. at 352 (discussion need be only “reasonably complete”). And the detail that reasonableness requires can depend on the stage of the approval process at which the EIS is prepared.

Detailed quantitative assessments of possible mitigation measures are generally necessary when a federal agency prepares an EIS to assess the impacts of a relatively contained, site-specific proposal. *See Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380–81 (9th Cir. 1998); *The*

Wilderness Soc’y v. Bosworth, 118 F. Supp. 2d 1082, 1106–07 (D. Mont. 2000).

But requiring such detail would often not be appropriate when the EIS concerns a large-scale, multi-step project and the risks to be mitigated cannot be accurately assessed until final site-specific proposals are presented. For the EIS to analyze in detail every possible site proposal could take enormous time and resources, much of which would be wasted on potential proposals that would never materialize. Thus, NEPA regulations allow for “tiering” of environmental reviews:

Tiering refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

40 C.F.R. § 1508.28. Tiering can “eliminate repetitive discussions of the same issues and [allows the agency] to focus on the actual issues ripe for decision at each level of environmental review,” *id.* § 1502.20, while “exclud[ing] from consideration issues already decided or not yet ripe,” *id.* § 1508.28(b); *see Sierra Club v. U.S. Army Corps of Eng’rs*, 295 F.3d 1209, 1215 (11th Cir. 2002).

N. Alaska Environmental Center v. Kempthorne, 457 F.3d 969 (9th Cir. 2006), is instructive. Environmentalists alleged that an EIS analyzing the environmental consequences of a BLM plan to offer long-term oil and gas leases in northern Alaska violated NEPA because it only “listed general mitigation

measures and did not analyze the effectiveness of each measure.” *Id.* at 979. The Ninth Circuit, however, upheld the EIS’s discussion of mitigation measures. Similar to the project at issue here, the BLM’s approval of the leasing plan did not approve any construction projects. Actual on-the-ground disturbances would not occur until the project’s exploration and development stages, *see id.* at 977, and permits for those actions would not issue until the agency had performed extensive analysis of site-specific environmental effects and appropriate mitigation measures, *see id.* at 973. Although the EIS included lease stipulations and required operating procedures to avoid or minimize the environmental impact of the leasing program, it left further details regarding possible additional mitigation measures to site-specific environmental assessments when lessees submitted exploration and development plans. *See id.* at 979. Given the uncertainty regarding which sites would eventually be developed at such an early stage of a multi-step process, the court determined that the “development of more specific mitigating measures” was not required at that time. *Id.*; *see Theodore Roosevelt Conservation P’ship v. Salazar*, 616 F.3d 497, 515–17 (D.C. Cir. 2010) (programmatic EIS’s discussion of mitigation measures satisfied NEPA even though many of the mitigation measures were described in general terms and their “exact application . . . [would] be determined on a site-specific basis”); *N. Alaska Env’tl. Ctr. v. Lujan*, 961 F.2d 886, 890–91 (9th Cir. 1992) (detailed analysis of mitigation measures is unwarranted in a programmatic EIS; it can be “deferred

until a concrete development proposal crystalizes the dimensions of a project's probable environmental consequences" (internal quotation marks omitted)).

We think that the EIS's discussion of the Project's impact on Area 9A standards was "reasonably complete." *Robertson*, 490 U.S. at 352. The EIS and the ROD indicate that further review will take place when the Lessees submit site-specific permit applications. That review will "be tiered to the [EIS]" and will "be limited in scope . . . to the site-specific aspects of the environmental analysis that were not covered by the [EIS]." *Aplts. App.* at 413. Because of the uncertainty regarding the siting of wells and ancillary facilities, much of the EIS analysis had to rely on "conceptual approximations of the best facility location based upon field knowledge, topographic map aids, and the application of well spacing rules." *Aplees.-Fed. Defs. Supp. App., Vol. I* at 110–11.

Even so, the EIS included more than seven pages of siting and engineering techniques and best management practices to "reduce CBM development effects to surface water quality, quantity, and use." *Id.* For example, the EIS recommends 11 mitigation measures if a pipeline, road, or power line has to cross a stream, wetland, or riparian area. As the EIS points out, the Forest Service Region 2 Watershed Conservation Practices Handbook describes the general effectiveness of many of these measures, often referencing empirical studies. The EIS also recommends the development of site-specific mitigation plans during the approval process of individual wells that would disturb wetlands or riparian areas,

and notes that the Forest Plan requires the Lessees to implement monitoring plans to assess surface-water quality.

SJCA has utterly failed to explain why it was unreasonable for the EIS to leave further detail to environmental analyses tied to specific site approvals. If SJCA believes that such analyses are nonexistent or inadequate, it can challenge the associated site approvals.

2. The Wildlife Standards

A footnote in SJCA's opening brief contends that "the [Federal Defendants] violated NEPA when [they] failed to demonstrate compliance with the Forest Plan's wildlife standards." Aplt. Br. at 47 n.15. We decline to consider this issue. SJCA's opening brief mentions this NEPA argument only that one time, and the footnote is in a section of its brief whose title—"The Forest Service Violated NEPA By Failing To Demonstrate Compliance With The Forest Plan's Stream Protection Standards"—does not encompass this issue. *Id.* at 45. Moreover, the footnote fails to develop SJCA's argument. It states: "For the same reasons [apparently referring to SJCA's reasons for believing that the EIS's discussion of riparian-area mitigation measures was inadequate], the agency also violated NEPA when it failed to demonstrate compliance with the Forest Plan's wildlife standards. For example, the Forest Service offered no analysis of whether seasonal traffic restrictions could achieve compliance with the Area 5B standards." *Id.* at 47 n.15. SJCA advances the argument no further, leaving to

this Court the burden of constructing a persuasive case for its position. This we will not do. Having raised the issue insufficiently in its opening brief, SJCA has waived it on appeal. *See Therrien v. Target Corp.*, 617 F.3d 1242, 1252–53 (10th Cir. 2010) (appellant waived argument on appeal when it mentioned the issue only once in a footnote in its opening brief and footnote did not contain argument); *Norris, a Dover Res. Co. v. NLRB*, 417 F.3d 1161, 1168 (10th Cir. 2005) (issue mentioned but not argued in footnote was not adequately briefed); *Utahns for Better Transp. v. U.S. Dep’t of Transp.*, 305 F.3d 1152, 1169 (10th Cir. 2002) (one-sentence NEPA argument waived because not briefed adequately); *United States v. Hardman*, 297 F.3d 1116, 1131 (10th Cir. 2002) (“Arguments raised in a perfunctory manner, such as in a footnote, are waived.”).

3. Air-Quality Analysis

NEPA required the EIS to analyze the Project’s cumulative environmental impact on the San Juan Basin and surrounding area. *See Richmond*, 483 F.3d at 1133; 40 C.F.R. § 1508.25. Cumulative impact is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such other actions.” 40 C.F.R. § 1508.7. It can “result from individually minor but collectively significant actions taking place over a period of time.” *Id.* In evaluating a proposal’s cumulative impact, an agency must consider the project’s “proximity to historical or cultural resources, park

lands, . . . or ecologically critical areas.” *Id.* § 1508.27(b)(3). As summarized by a fellow circuit:

[A] meaningful cumulative impact analysis must identify five things: (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions—past, present, and proposed, and reasonably foreseeable—that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

TOMAC, Taxpayers of Michigan Against Casinos v. Norton, 433 F.3d 852, 864 (D.C. Cir. 2006) (internal quotation marks omitted).

Because CBM drilling and various activities associated with the construction of CBM wells and their ancillary facilities can affect the surrounding region’s air quality, the Federal Defendants used air-pollutant-dispersion modeling to assess the Project’s cumulative impact on air quality and visibility. Their modeling sought “to quantify potential [carbon monoxide] and [nitrogen dioxide] impacts during [well] operation, based on the period of maximum potential emissions and other emission sources located within the Analysis Area.” Lessee’ Supp. App., Vol. I at 315. The analysis covered 12,600 square miles of southwestern Colorado and northwestern New Mexico, and assessed the Project’s air-quality impacts at Mesa Verde National Park and Weminuche Wilderness Area in Colorado.

SJCA contends that the Federal Defendants’ analysis nevertheless violated NEPA because they failed to assess the Project’s effects on air quality and visibility in certain “Class I” areas within New Mexico. The Clean Air Act defines Class I areas to include national wilderness areas exceeding 5,000 acres and national parks exceeding 6,000 acres. *See* 42 U.S.C. § 7472(a). The Act declares as a “national goal the prevention of any future . . . [manmade] impairment of visibility” in Class I areas. *Id.* § 7491(a). SJCA argues that the absence of an assessment of the New Mexico areas “violated NEPA’s requirement to take a hard look at the impacts of the Project to these areas, which Congress has identified as being ecologically critical,” and that “[t]he stunted scope of [the cumulative-impact] analysis cannot be excused as a necessary line-drawing decision by the government.” *Aplt. Br.* at 50.

We disagree. Setting the boundaries of the region to be analyzed involved technical and scientific judgments within the Federal Defendants’ area of expertise, and their conclusion regarding which Class I sites to include in the analysis is one to which we defer. *See Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976) (the “determination of the extent and effect of [cumulative environmental impacts], and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies”); *Morris*, 598 F.3d at 691 (“[O]ur deference to [an] agency is especially strong where [its] challenged decisions involve technical or scientific matters

within the agency's area of expertise." (internal quotation marks omitted)). Both the Mesa Verde and Weminuche Class I areas are closer to the Project Area than the New Mexico Class I areas. SJCA has not demonstrated that it was unreasonable for the Federal Defendants to conclude that "any visibility impacts in Class I areas would be greatest in those two areas, and impacts at other, more distant areas would be less significant." Fed. Defs. Br. at 57. We recognize that the New Mexico Environment Department disagreed with this conclusion. According to the state agency, dispersion modeling analyses demonstrated that "emissions from the Four Corners region degrade New Mexico's Class I areas visibility equally or more than Colorado's Class I areas," a fact which necessitated "analysis at northern New Mexico Class I areas." Aplt's. Appx., Vol. II at 434-35. But "the Four Corners region" encompasses a far larger area (and much of it significantly closer to New Mexico Class I areas) than the Project Area. And in any event, "[w]hen specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts even if, as an original matter, a court might find contrary views more persuasive." *Marsh*, 490 U.S. at 378; see *Greater Yellowstone Coal. v. Flowers*, 359 F.3d 1257, 1272 n.14 (10th Cir. 2004) ("[An agency] is entitled to rely on its own experts even when their opinions conflict with those of other federal agencies, as long as its decisions are not arbitrary and capricious."). The Federal

Defendants' decision to limit the study to Colorado Class I areas was not arbitrary or capricious.

IV. CONCLUSION

For the reasons stated above, we REMAND to the district court with instructions to VACATE that portion of its judgment pertaining to the NFMA claims challenging approval of the Project, and DISMISS those claims without prejudice; we AFFIRM the district court's order regarding the NEPA claims and the NFMA challenge to approval of the Bull Canyon wells. Appellants' Motion to Strike the Forest Service's supplemental brief and addendum is DENIED.